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Reassessing the Demographic Imperative

W. Edward Folts, Edwin Rosenberg, Kenneth B. Muir, and Lorin A. Baumhover

ABSTRACT

For many years gerontologists have discussed the consequences of advances that have lengthened lives but have been less successful at improving the quality of those lives. While this debate continues, the resulting demographic shift in the age profile of the United States threatens to overwhelm our ability to care for those who most need assistance. In the absence of major policy changes or dramatic medical discoveries, or both, the need for institutional care among the population 85 and older will soon exceed the available resources.

ARTICLE

Demographically, the last 50 years can be characterized by a major shift in the age profile of the world's population. Relative improvements in sanitation, food supplies, and medical technology, along with a variety of life-enhancing and life-sustaining developments, make it likely that the current human population is older than at any other time in human existence. To be sure, starvation, disease and early death in developing countries remain monumental problems that frequently defy attempts to address them. However, the general trend, especially in the industrial and postindustrial countries of the world, has been to push illness and death into older and older ages.

Along with the obvious benefits of lengthening human life, come new policy and resource-management issues that few have considered. It has long been known, for example, that older adults represent a rapidly growing segment of the U.S. population. In just one decade the population of older adults 85 and older grew by over one-third, from 3.02 million in 1990 to over 4.23 million in 2000. Moreover, projections are that, by 2030, this 85+ population will number well over 8.9 million people (U.S. Bureau of the Census, 2000a). The problem is not the size of this population. Rather, the problem is the age-associated limitations that frequently accompany this oldest-old age group. These are the people most likely to need some form of assistance, and their need is quite likely to overwhelm our ability to provide such assistance.

This problem is not new. There have been periods of time when portions of the population have declined or expanded in response to a variety of social elements—economic cycles, wars, changing cultural values, and changes in medical technology. What is new is that the number of people involved has never been this large, nor has this type of rapid growth ever typified a subpopulation that is the most likely to need all types of assistance.

In the past, we have heavily relied on medical discoveries, techniques, and procedures that had the impact of making earlier practices obsolete. Serious policy discussions about how best to meet the needs of a rapidly expanding population of polio victims, for example, were made moot by a series of medical discoveries in the mid-1950s. These advances relegated this once-feared killer of the young to the status of little more than a medical oddity. We have been quite fortunate that such medical advances have been commonplace over the last 60 years. But, what if the service needs among the oldest-old population remain at present levels? And what if our highly successful effort to extend the quantity of life continues to be matched by our seeming inability to improve the quality of our lives? Ultimately, what if there are no major medical miracles in the next 30 years? What then?

It has been clear for the past few decades that the population of the United States is aging rapidly. Considerably less growth in the younger aged populations and an essentially stable birth rate have made this demographic shift a compelling issue. In its simplest form, the question is this: What will be the long-term impact of a rapid increase in the segment of the population most likely to have chronic care needs on a health delivery system that is focused on acute care in institutionalized settings, and that does not satisfactorily address even present needs? The answer, we believe, is not generally a positive one.

Obviously nursing care, home health services and assisted living arrangements are needed by people of all ages. However, equally clear is that the “heavy users” of these services are older adults. Consider for example;

- In 1997, 51% of all nursing-facility residents were 85 or older;
- In 1985, the average age at admission to a nursing facility was 81.1. By 1997, that had increased to 82.6;
- The most common medical reasons for admission to a nursing home did not change between 1985 and 1997. They included the following:
 1. Cardiovascular diseases, including stroke and hypertension;
 2. Mental disorders, including cognitive disorders, anxiety, depression, and organic brain damage;
 3. Disorders of the endocrine system that include hypothyroidism and type II diabetes.

NURSING FACILITIES

Table 1 compares the trends in population growth and the number of available nursing-home beds by decade from 1970 to 2000. In addition, projections are made for the years 2010 to 2030. The population projections used here are based on the Census Bureau’s mid-range projections. The projections for the percent increase in the number of nursing-home beds are based on the average of the percent increase from 1970 to 1980 (27.9%), 1980 to 1990 (25%), and 1990 to 2000 (2.2%).

TABLE 1 Number and Percent of 85+ Adults and Nursing Home Beds by Decade: 1970–2030

Decade	Population 85+		Nursing home beds		Ratio: 85+ /Beds
	Number	Percent ^a	Number	Percent ^a	
1970	1,408,000	—	1,202,000	—	1.17
1980	2,240,000	59.1	1,537,000	27.9	1.46
1990	3,022,000	34.9	1,921,000	25.0	1.57
2000	4,239,587	40.3	1,965,000	2.2	2.16
2010 ^b	5,786,000	36.5	2,326,560	18.4	2.49
2020 ^b	6,763,000	16.9	2,754,647	18.4	2.45
2030 ^b	8,931,000	32.1	3,261,502	18.4	2.74

^aIncrease from prior decade.

^bProjected increase.

As shown in Table 1, the rate of increase in the population 85 and over far exceeds the projected number of available nursing-home beds. Furthermore, unless some intervening factor

changes the rate of increase in either the number of people 85 and over or the number of nursing home beds, by 2030 the ratio of individuals 85 and over to the number of available nursing-home beds will increase from slightly over one person per available bed to almost three people per available bed.

Obviously, not all those 85 and older will need nursing-home placement. In fact, gerontologists are quick to point out that only about 5% of the population 65 and older is institutionalized at any one time (Cox, 2001; Hooyman & Kiyak, 2001; Weeks, 1984; Atchley, 2001; Morgan & Kunkle, 2001). Usually, this statistic is presented in the context of arguments about the generally good health of older adults as reflected in higher life expectancies over the last century. Less well appreciated is the fact that the proportion of institutionalized adults increases dramatically with age. As Hooyman and Kiyak (2001) point out, for example, about a fourth (24.5%) of those 85 and over and half (50%) of those 95 and over resided in nursing homes in 1993. If we assume that about one-fourth (24% is used in the calculations) of the 85 and over population will require institutionalization in future years, then, using the assumptions already discussed, Table 2 can be constructed to compare the likely need for nursing home beds with the number likely to be available. Again, the ratio of the number of available beds to the number of persons likely to need those beds increases by decade from .281 in 1970 to .657 in 2030.

TABLE 2 Population 85+ , Available Nursing Home Beds, and Nursing Home Beds Needed

Decade	Population 85+		Nursing home beds		Ratio:
	Number	24%	Number	Excess/(Deficit)	24%/Beds
1970	1,408,000	337,920	1,202,000	864,080	.281
1980	2,240,000	537,600	1,537,000	999,400	.349
1990	3,022,000	725,280	1,921,000	1,195,720	.378
2000	4,239,587	1,017,260	1,965,000	947,740	.518
2010 ^a	5,786,000	1,388,640	2,326,560	937,920	.597
2020 ^a	6,763,000	1,616,640	2,754,647	1,138,007	.587
2030 ^a	8,931,000	2,143,440	3,261,502	1,118,062	.657

^aProjected.

So far, these projections suggest that the number of nursing-home beds available will exceed the number necessary to meet the needs of about a fourth of the 85 and over population, at least until 2030. The year 2030 is interesting because it is in that year that the first of the baby boomers will reach 85. Although speculations about the size and health of that population are profoundly important, they are beyond the scope of the present discussion. With what appears to be a longterm excess of available nursing-home beds, it is easy for policy makers to be misled. Not all of the available nursing home beds will be available to the 85 and over population. For example, there is good evidence that about 50% of the nursing home beds in the United States are currently occupied by those 85 and older (U.S. Bureau of the Census, 2000b; Atchley, 2000). Using the projections generated above, one final comparison can be made. In Table 3, the number of nursing home beds likely to be required by the 85 and over

population is compared to 50% of the number of beds likely to be available. The result is striking. Especially troublesome is the ratio of 24% of the 85 and older population to 50% of the available nursing home beds. As shown in Table 3, the ratio was .562 in 1970, but by 2030 the ratio will increase to approximately 1.31.

The trends indicated by Table 3 illustrate just why gerontologists, health-care planners, families, and older adults themselves should be concerned. If our assumptions and projections are even close, between now and 2030 the number of older adults 85 and over likely to need nursing-home care will exceed the number of nursing-home beds available to them by an increasing amount. By 2030 there are likely to be around one-half million persons (512,689) who are 85 and over, likely to need nursing home care, and for whom no nursing-home beds are available.

TABLE 3 Total Number of Nursing Home (NH) Beds Available and Needed by 85+ Population: 1970–2030

Decade	NH beds available	NH beds available to 85+ (50%)	NH beds needed by 85+ (24%)	Surplus (Deficit)	Ratio: 24% of 85+ to 50% of beds
1970	1,202,000	601,000	337,920	263,080	.562
1980	1,537,000	768,500	537,600	230,900	.700
1990	1,921,000	960,500	725,280	235,220	.755
2000	1,965,000	982,500	1,017,260	(34,760)	1.04
2010 ^a	2,326,560	1,163,280	1,388,640	(225,360)	1.19
2020 ^a	2,754,647	1,377,323	1,616,640	(239,317)	1.17
2030 ^a	3,261,502	1,630,751	2,143,440	(512,689)	1.31

^aProjections.

Obviously, these calculations are based on several key assumptions, and much could intervene to make this issue less or more severe. The assumptions can be simplified into four closely related sets of issues: 1) population issues; 2) medical and technological issues; 3) family issues; and 4) economic issues.

POPULATION ISSUES

Estimates about the size of the 85 and over population in 2030 are likely to be reasonably accurate. For one thing, there is an upper limit on the estimate because all of those who will be in that age category in 2030 were born in 1945 and before. There are, however, three variables that can impact the size of this population: mortality rates, immigration rates, and emigration rates.

Although the reasons are beyond the scope of this discussion, mortality rates and life-expectancy tables consistently underestimate length of life. While that is good news for most of us, it also means that the population estimates used here may be too low. If that is the case, the problem of insufficient nursing-home beds will be even more difficult to address than we are

suggesting. Thus, using methods that underestimate longevity does nothing to counter our basic argument.

IMMIGRATION RATES

Potentially, the most volatile element in our argument involves immigration. The estimates used here are based on a population of people who are alive today and who are currently living in the United States. That means that any unforeseen large increase in the immigration rate of people who are at least 58 now will exacerbate the problem identified here. The likelihood of this is minimal but, again, changes in the immigration rate for people in this age category do nothing to counter our argument.

EMIGRATION RATES

Related to immigration rates, emigration rates involve the number of people likely to leave the United States for other countries. Although countries such as Mexico and others in South and Central America have historically been attractive, low-cost retirement areas for U.S. retirees, the number of those emigrating has not been substantial enough to impact our basic argument. In fact, there is evidence (Longino, 1991; Quadagno, 2002) that retirement emigration is limited to younger retirees and is temporary in the sense that when they reach a certain age or level of disability, they return “home.” It is thus unreasonable to believe that large numbers of older adults will choose to emigrate at a time when they are most likely to need assistance.

MEDICAL AND TECHNOLOGICAL ISSUES

As they relate to the need for nursing home care, medical and technological issues are quite simple matters. Either there will be some discovery or advance that will reduce the dependence of the 85 and over age group on institutions or there will not. If there is, the question then becomes whether breakthroughs will benefit enough people soon enough to make a real difference in the need for institutionalization within the next 30 years.

Historically, medical advances have benefited the young far more than those already in the oldest age groups. For example, life expectancy at birth in 1900 was around 47 years. By 1995, largely due to medical advances in latter half of the 20th century, life-expectancy at birth had been extended by just over 28 years to 75.4 years. The problem is that the life-expectancy at age 65 in 1900 was 11.9 years and in 1995 it was 17.2 years, a difference of only 5.3 years. Thus, it is probably unrealistic to depend upon unforeseen advances in either medicine or technology that will substantially reduce the need for long-term institutional care for a substantial proportion of our oldest citizens.

FAMILY ISSUES

The role of the family in the care of older relatives has long been acknowledged, if not fully appreciated. The early work of Elaine Brody and others suggested that the amount of care provided to older relatives by their families was substantial. Although difficult to measure, an estimate generally accepted by the gerontological community is that somewhere around 80% of all care received by older adults is provided by their families (Atchley, 2000). Assuming this is correct, it suggests that families cannot be relied on for much more care than they already provide. This issue is made more compelling when one considers that, over time, the American family tree has come to resemble what Bengtson, Rosenthal, and Burton (1990) have called a “beanpole” with more generations but fewer members in each. As a consequence, there are fewer family members available for all types of eldercare. Thus, if a substantial decline in the need for institutional care among the oldest-old does indeed occur, it is not likely that it will be due to increased caregiving activity by families.

ECONOMIC ISSUES

The basic problem of too few nursing-home beds might be approached from an economic standpoint. Constructing additional nursing homes is indeed a simple solution to the problem. However, because of the sheer number of beds needed, there is reason to believe that such a construction effort is unlikely. Our projections of the construction rate notwithstanding, no one knows precisely how many nursing home beds are going to be built between now and 2030. However, the fact remains that if 24% of the 85 and over population needs nursing care in 2030, we will need to place in service 1,160,940 new nursing-home beds. To meet this goal, we would have to open one 117-bed nursing facility every day for the 27 years remaining between now and 2030. Furthermore, assuming a constant average cost of nursing home placement (currently around \$50,000 per year) the additional beds would consume an additional \$58,047,000,000 in economic resources per year and this cost does not include the construction cost.

A construction effort of this magnitude is unlikely given our current economic and political environment. In fact, there is evidence of a counter-trend, and the reason appears to be simple: money. Medicaid currently pays for about 40% of all long-term care (National Academy on Aging, 1997), and pays the bills of over one-quarter (27%) of those 65 and over who enter nursing homes. In addition, Medicaid assumes financial responsibility for an additional 14% who, after admission, deplete their assets such that they qualify for Medicaid benefits (Spillman & Kemper, 1995). One could reasonably surmise that the percentages for the oldest-old are even higher.

Currently, long-term care consumes between 30% and 50% of the total Medicare spending, and 81% of long-term-care Medicaid dollars go to nursing homes (Burwell, Crown, O'shaugnessy, & Price, 1996), and Medicaid's nursing-home expenditures are rising by about 10% per year (Feder et al., 1999). All of this occurs in a context of record state budget short-falls and repeated budget rescissions aimed at reducing state expenditures. As a consequence, some states have

implemented a moratorium on new nursing-home construction, thus limiting the number of beds that qualify for Medicaid reimbursement.

CONCLUSION

What then are we to do? There is good historical evidence to argue that the United States is decidedly reactive in dealing with policy issues related to aging (Daniels, 1994). There is some comfort in knowing that, when forced to do so, Americans have come up with innovative ways of meeting the most desperate needs of its citizens. However, as a nation we have never dealt with these types of needs for a population this old or this large. The current political climate appears to favor those with the wealth and resources to provide for themselves. That is not likely to describe any but a small fraction of those who will become 85 and over in the coming decades.

An appropriate proactive response would be to increase the number of nursing-home beds available to those who most need them by decreasing the number of residents who least need them. Questions about the efficacy and appropriateness of institutional care in its current form notwithstanding, it seems reasonable to reserve existing beds for those most in need of care. Apart from “ghettoizing” long-term care, this sounds good. However, as a practical issue, it matters little whether we have to find alternative arrangements for those 85 and over or for those under 85. The fact remains that unless the need for institutional care can be prevented, our ability to provide that care is seriously in doubt.

The good news is there are a number of innovative ways that this issue might be approached. Home health care, assisted living, shared living, group homes, and a variety of other types of housing and care-delivery methods have all been suggested as alternatives to institutional care (Folts & Yeatts, 1994; Streib, Folts, & Hilker, 1984). Some have been implemented, some have not. The bad news is that, so far at least, none of the proposed or implemented alternatives is seen as effective in reducing the need for institutional care. Additionally, some of the proposed alternatives might actually prove to be more costly than institutional care.

Regardless of the final form of our response, it remains that we will be forced to deal with unprecedented growth in a segment of the population most likely to need institutional care. How we deal with that growth will depend on factors that few policy makers have considered. The really bad news is that we may already be too late to meet the needs of the oldest and most dependent members of our society.

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